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## MYCTOPHUM PHENGODES IN THE NORTH ATLANTIC.

BY HENRY W. FOWLER.

**Myctophum phengodes** (Lütken).*S. [copelus] phengodes* Lütken, Kongel. Dansk. Vidensk. Selsk. Skrift. (København), 6e Række, VII (1890-94), 1892, p. 253, fig. 11.

No. 7,987. From the Atlantic Ocean, in 60° N. Lat., between Greenland and North America. Dr. I. I. Hayes.

Form of the body of the fish elongate and compressed, and much as in Goode and Bean's figure (No. 84) of *Myctophum remiger*. The greatest depth of the body is about the pectoral region, and it is contained in the body (excluding caudal) about 4 times.

The head is rather large and about  $3\frac{3}{4}$  times in the body (without caudal), blunt and compressed. Eyes large and anterior in position, about  $2\frac{1}{2}$  in the head, and while less than the greatest posterior part of the interorbital region they are larger than the least, or anterior, width of the same. Mouth large, the distal expanded extremity of the maxillary posterior to the eye for nearly the length of the snout, and the mouth-cleft itself occupies  $\frac{2}{3}$  the length of the head. Margin of the preoperculum slopes slightly posteriorly and forms a slightly convex curve which bulges posteriorly. Nostrils directly anterior to the eye and placed laterally upon the blunt snout. Pseudobranchiæ large. Gill-rakers long and slender upon the first arch, some longer than the gill-filaments. Tongue narrow, knobbed, and free anteriorly. Minute villose teeth upon the jaws.

Origin of the D. nearer the tip of the snout than the base of the caudal. Base of D. a little more than  $\frac{1}{2}$  the base of the A. Base of last D. ray over the origin of the A. The P. are long and pointed, and with their tips extending nearly to the anus and almost to the medio-lateral photophores. Origin of the V. a little anterior to the origin of the D. and the tips of the fin extending to the origin of the A. Adipose D. a little nearer the base of the caudal than the base of the last D. ray, though the posterior margin of its own posterior moiety is anterior to the base of the last

A. ray. The least depth of the caudal peduncle is equal to the anterior interorbital region.

The photophores are as follows: 3 mandibulars on each side of the mandibles; 2 operculars near the lower part of the margin of the preoperculum; 5 thoracic on each side; 4 ventrals on each side; 8 anals, a gap, then 9 more, in all 17 on each side; 3 pectorals on each side; 1 antero-lateral on each side a little posterior, though above, the bases of the V., but nearer to the latter than to the lateral line; 3 medio-laterals on each side, forming an oblique series on each side, the lower a little anterior to the last ventral photophores, and the uppermost immediately below the lateral line and in advance of the first anal photophore; a single photophore, the postero-lateral, almost on the lateral line and above and anterior to the eighth anal photophore; 2 caudals upon each side inferiorly, and a single supercaudal at the origin of the rudimentary caudal rays. The caudal, though somewhat damaged, was forked, the lobes most likely rounded, and the lower a trifle the larger. The lateral line consists of a single well-developed pore on each scale of its course, which is superior, and parallel with the dorsal profile of the back. Scales 42 (?). Radii of D. 12. Radii of A. 22.

My first impression was to regard this specimen as *Myctophum remiger* Goode and Bean, but a careful examination has revealed the facts mentioned above; and if, as Goode and Bean contended, "the arrangement of the luminous spot is of the greatest value in the classification of these fishes," there can be no reasonable doubt that it is Lütken's *Scopelus phengodes*.

Although the localities where Lütken obtained his examples were all in southern latitudes, and very remote from that where the present example was taken, I identify it with the above species without any hesitation, as it agrees perfectly with the essential characters given. Specimens from widely remote localities in the case of deep-sea and oceanic fishes do not always necessarily form a barrier to their identity as one and the same species.

That *M. phengodes* and *M. remiger* are allied is also evident by their long P., the large eye and shape of the head, as seen on comparison with an example of the latter species.

The example described above is in the collection of the Academy of Natural Sciences of Philadelphia. It possesses a median infero-caudal photophore.